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DENTAL  
JOURNAL

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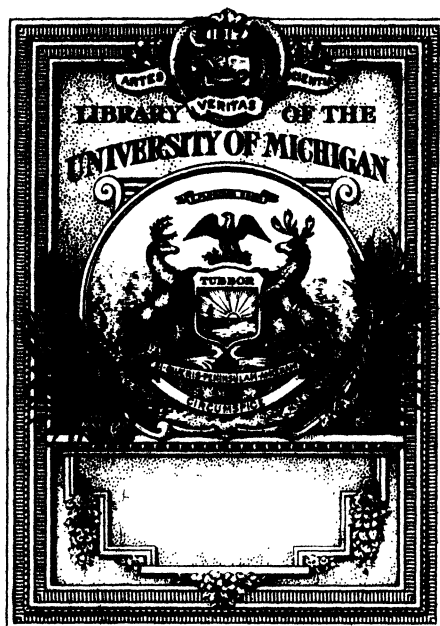
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# *The* AMERICAN DENTAL JOURNAL

BERNARD J. CIGRAND, M. S., D. D. S.

Editor    Publisher    Proprietor.

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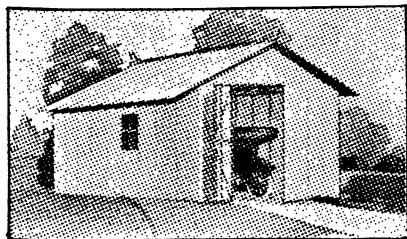
## TABLE OF CONTENTS

### EDITORIAL—

	PAGE
The Evolution of the Dental Inlay.....	257
Comment—.....	267

### ORIGINAL CONTRIBUTIONS—

The Dentists Mutual Protective Alliance. By Dr. B. J. Cigraad.....	272
The Bliler Half Nelson. By H. E. Bliler, D.D.S., Chicago, Ill.....	278
University Education—Professional Training. By President Edmund J. James University of Illinois.....	282
Chief Paul's Gold Tooth. By Claude H. Bermingham.....	284



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Oct. & Nov. EDITORIAL AND COMMENT

1914

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## THE EVOLUTION OF THE DENTAL INLAY

### AWAKENING OF PATENT PROBLEMS

In this issue of THE AMERICAN DENTAL JOURNAL, the editor begins a series of historical articles, which will trace the methods of forming inlays—the swaged and casted—and show step by step how this phase of dental practice was evolved and credit the claims of the respective practitioners who announced their proceedings. It is not the purpose of these papers to delve deeply into the technic or the varied merits of these inlays, but to bring to the profession, references which will be of value in not only the class-room but in the practitioner's office, and thus inspire further research and discovery, and possibly contribute by this means, further advancement along these operative and prosthetic lines.

THE AMERICAN DENTAL JOURNAL will maintain an inde-

pendent policy in bringing to its readers the history of not only this feature of dental practice, but other features, and will, if sufficient interest is manifested, publish each month, a summary of the patents relating to dentistry which come with diploma from the patent office of Washington, as well as those which shall emanate from the patent bureau of Berlin, Paris, London and other nations; and by this means will institute the first real attempt at placing the practitioners in immediate apposition with the material advancement of the profession as reflected at the patent offices. Heretofore the dental periodicals have just merely mentioned the various patents which the government at Washington has granted to certain dentists and the name and the number of the patent, is all that is published. These naked facts, without the inspiring phase of the picture of the patent, and without the additional fascination of a brief description of the new articles, have not in the remotest interested the practitioners, and hence no inventive impetus has been given the readers.

This journal, at considerable expense, will each month give the pictures of new dental appliances together with a brief, comprehensive description (shorn of the patent office technicalities and verbose reading matter) and thus give you every thirty days a complete summary of the real progress of your profession. This certainly will be a valuable contribution to the literature of our calling and I am reasonably certain that every practitioner who hopes to keep abreast of the art and the science of dentistry, can little afford to miss these monthly articles, and all that I will ask in return, for this valuable service, is appreciation on the part of the readers of THE AMERICAN DENTAL JOURNAL, and this will be easiest indicated or demonstrated by subscribers keeping the credit side of their subscription properly balanced with one dollar for the journal. This will be indeed little expense, in view of the fact that you get besides all these monthly patent records, the remainder of THE AMERICAN DENTAL JOURNAL'S literature of general progress. Now if you are convinced of the good which may come from such a departure in periodical dental literature, write me and let me get the opinions of my readers.



Let it be also understood right now, that this journal will not become the official organ of any dental organization, regardless of its mission; this dental periodical during my editorial control has not become the mouth-piece of any fraternity, yet treats them all cordial and with esteem; this journal is not a servant to any dental depot or supply house, though it praises their worthy output; this monthly journal is not the mirror of any dental college yet renders every consideration to the high standard institutions of dental education; and this magazine will not lend itself to any clique, or become subservient to any dental gathering no matter who may be its sponsors or what character of flesh they may feed upon. This periodical under my personal guidance stands for the entire profession, and not for the privileged few but for the practitioners in general, for the dentists from the stony coast of Maine to the warm sand-bathed shores of California; and from the ice laden north pole to the frost bitten pole of the south. In short it is American, in all that this term may imply and with your additional support, this huge task which for many years I have personally assumed the burden will become not only lighter but gradually more pleasant and attractive.

While it does not represent specially, any of the numerable elements which make up the dental profession, and by these I mean the colleges, fraternities, dental depots, dental supply houses, laboratories, state boards and kindred dental corporations and organizations, yet it hopes to treat all these varied components with the highest respect and give to each and all such equity, which they deserve, and my treatment of them shall appeal even to one biased and one devoid of liberality of mental attitude. With this as the policy of THE AMERICAN DENTAL JOURNAL, it has attracted to itself, the students of the profession and practitioners have found its career adapted to the needs and the wants of the great calling which we serve.

This journal accepts only such advertising matter as has proven to be worthy and has given evidence of its reliability. And I never get a new subscriber, and some days they

come in clusters, without renewing my pledge, that the journal shall be free and independent and that its editorial pages shall have words which carry a plan and follow a policy which shall indicate a way and point to higher professional grounds. And this statement brings me to say what I long since have waited to announce: "From the bottom of my heart, I feel a gratitude for the subscribers and the advertisers who have made the liberal policy of this journal possible during the past years, and may success, prosperity and happiness come to you all for this generous method of assisting in making your profession a truly liberal calling."

Hence with this broad gauge policy and this hope of serving honestly every phase of progress without being tied down or enforced to take a false stand I cheerfully approach the task of making a monthly summary of interesting pictures and comprehensive descriptions of such patents as may be of concern to us, regardless of what land they come from, or from what racial mind they spring. If you believe in the good of such a department in this magazine, do not sit back and dream about it and in your somnambolistic expressions praise or condemn it but let me know from you personally if you approve of such a departure and if you can augment the scope without overburdening your editor financially or mentally, why send in the suggestion, it may be the very thing that was missing to make it logical, valuable and correct.

No feature of invention and certainly no problem of basic interest could equal the topic of patent discoveries or inventions, just now, especially so since at the present writing considerable importance has been assumed by contending elements regarding dental inlays, and hence the initial number of this patent office series will begin by gathering together such material as will aim to give a summary of the inlay and permit the practitioners who evolved them, to speak for themselves and I shall also incorporate the arguments advanced by leaders of the profession who have either aimed at preventing the patents or those who have strenuously advocated their grant.

The appliance or apparatus patent has the center of the

stage, none can deny, and that the possibility of the possession of a patent-diploma on an appliance, apparatus, machine or instrument, is still a great influence in the progress of dentistry, most practitioners will readily grant. Hence appliance patents are today and have been for some time past leading actors and have been accepted by the great audience of practitioners as meriting our applause and encouragement. But whether the process patent or patent of method, which has been co-related in this stage of action, shall come to the front and become the star actor, that is for the court to determine and then to be accepted or rejected by the dental profession; notwithstanding that the latter has nationally and locally placed itself on record as discouraging and opposed to process patents, it is nevertheless purely a legal problem; if the law is wrong change the law.

This array of reference material which has been a part of my research historical work, covering some twenty years, I shall gladly give together with their arguments for and against as they apply to many of the instruments and appliances or processes, which we now employ in our daily practice. Evidence of the liberal sided attitude of this journal along these lines are evidenced in the magnificent article by Charles McManus in treating serially of the great work of the famed discoverer Horace Wells who cheerfully gave all he possessed to advance the subject of general anæsthesia, and who bequeathed a blessing to humanity, yet whose own "twilight of life" was a requiem of sadness, sorrow and remorse—almost neglected and practically starved. This sure was generosity. This sure was love of humanity; but he too, suffered personal stings such as common mortal little knows about. My editorials along this same line of the tragedy of inventors, showed their generous natures, but an inappreciation of their profession; and this has taught the readers of the magnanimous characters who have assisted in placing the profession upon this present high plateau, from whence other promised lands are clearly visible. That there is within all this strife of progress, elements of injustice and phases of ill treatment there is little doubt, and it requires keen vision to foretell what the future has in store;

yet the proper prophet of the future has always been the past, and a study of the history or evolution of any material or mental progress soon brings to the surface the pangs of ingratitude or the sting of personal obligation. That the profession is in a transitory way, and that it seems to halt, hoping to regain harmony and thus again to assume a concordant front, is evident to any who have looked over the field and observed the doubtful attitudes of old or young, of affluent and of the struggling, and the shifting of opinions of the leaders. To be in touch with this shaping up problem is your professional duty, even though you may personally be unable to directly contribute a definite destiny to the equation. Be in harmony, by being informed, and this may lend in shaping regardless of the results of the court, the larger problem—the welfare of your profession.

In the July, August, September and October issues of THE AMERICAN DENTAL JOURNAL of 1912, I wrote editorials on the "Evolution of the Inlay-Swaged and Casted-Formed by Gravity or Under Pressure." And since this editorial of thirty months ago, liberally introduces this subject of patents I will use it as the proem to these serials on the same subject and they read as follows:

"Of late the overwhelming theme in dental organizations seems to be the historical or evolutionary side of the dental inlay, and the greatest possible good always follows when a profession takes to historical or scientific researching. Much new thought is induced by rambling among the dusty pages and the origin and beginning of any great method, system or policy is always interesting and instructive.

"This subject has been made the prime element in recent operative and prosthetic procedures, and owes, without the shadow of a doubt, its important place in dental practice to Dr. W. H. Taggart, of Chicago. And while he is the person who brought it emphatically to the attention of the practitioners, he is not the first person to have applied pressure in casting of metals, nor is he the first to have made gold inlays. But to him we owe the bringing to a systematic and perfected state that which was understood by other callings, and to him we

owe the application of certain original principles to the location of gold in properly prepared dental cavities. Dr. Taggart, practically is the Columbus in this new world of operative dentistry—transformed into prosthetic dentistry. Like in the case of Columbus, Taggart has his Bjani Herjulfson; he has his Thorfinn Karlsefni; he has his Leif Ericson; his Thorvald and his Freydis.

“It is vivid in my memory, when a boy at school I learned from ‘Swinton’s History of the United States’ the heroic tale of Columbus; it inspired in me a veneration for his fortitude, his courage and his resignation. Then when in larger histories I read of the discovery of America, by men prior to Columbus, I was indignant at the audacity of the authors, and as time went on and further and stronger light was thrown on the problem of the discovery of America these earlier discoverers, instead of robbing Columbus of his greatness, seemed only to lend a more radiant glory about the head of my earliest hero, Columbus.

“It shall be so with Taggart, when all is said and done, and all the facts gathered, recorded and compared—the early meager attempts, many hidden under the bushel basket, all shall tend to render unto Taggart the emphatic testimony that like in the case of Columbus, from his find onward, there was life, there was hope, there was success.

“The sooner all the truths are fully and unbiased in their exposition, the sooner will the profession have a correct view of Dr. Taggart’s work, and if Dr. Taggart will admit of an early acknowledgment of prior men’s labors, in pressure casting—model disappearing, and shrinkage preventing processes—the quicker will he obtain that lasting gratitude which he deserves of emphatically, like Columbus, giving new light on an old continent, long, anciently long beheld, by both Indians, Irish, Welsh, Norman and Scandinavian eyes. The glory of Columbus rests not in the revival, the rejuvenation of the re-discovery, but in the triumphant disclosure and earliest complete report and demonstration.

“Several years ago, your editor, at the request of Dr. R.

C. Brophy, wrote an article on the subject of "Evolution of Cheoplectics as Applied to Dentistry." This article appeared in "The Bur," of July 1908, and was the earliest attempt at giving actual history of castings as employed in dentistry and also emplatically indicated the great work of Dr. Taggart. This published article is as follows:—

"Of late the theme of cast work in both operative and prosthetic dentistry is attracting considerable attention. The history of cheoplastic art is interesting and instructive.

"The subject of casting under pressure is indeed both ancient and interesting. The Japanese and Chinese were early adepts in the founding of metals, and their minute and intricate castings under pressure are the wonder of the world. It is claimed they were the first to use the so called disappearing model though to credit this ancient principle in casting to any definite nation must, at least, be questionable; certainly the individuality of the inventor is not of record. Egyptologists inform us that minute bronze castings of this character date as far back as 2,000 before the Christian era. Casting small objects and using an abundance of metal to weight down the molten metal while forming, is also ancient, and the idea of force, in shaping or fashioning the metal while still liquified is an old principle in casting. Iron was cast in France, by the aid of piston pressuse as early as 1400, while air, gas, steam, and the orbital forces were known decades ago. The disappearing model, or false core, as the founders call it, burns out in cases where the future use is unimportant, or where the possibility of washing out with hot water or burning out, is precluded because of the difficulty of mould separation, as in casting statuary or delicate jewelry.

"To produce condensed castings, the following from the pen of that eminent scientist, Sir Joseph Whitworth, will be instructive: 'Castings, when filled from above, are liable to be spongy or unsound; in such cases an extra length is given at the top of the mould and the unsound portion or dead head is afterward removed; this casts the intended form by pressure of metal. This plan is usually followed in casting of bronze guns. Sound

and dense castings can be obtained by filling with a vertical side runner, so that the metal enters the mould from below and solidifies under the hydrostatic head represented by the vertical height and weight of the runner. The method of applying hydraulic pressure to the metal in the mould until it solidifies, has been adopted with great success in producing sound, dense and unchanged casts.'

"In a paper I read before the Chicago Dental society, entitled 'Methods Which Avoid the Display of Gold in Individual and Assembled Cases,' I gave the society a summary relative to the various methods and indicated their priority as recorded in our dental journals or registered in the patent office at Washington, D. C., where I spent considerable time, deducting data regarding these various processes and appliances. The subject of crowns, the date of patent entry and the supposed accredited inventor were given in this paper. Among other things mentioned in my closing discussion, the following may be of interest to the searching student of dental data:

"There are inaccuracies undoubtedly in the patent office as well as in other things. I agree with Dr. Matteson in saying that credit should be given to those to whom it is due. I must say, conscientiously, that while I did the best I could in the patent office, it was the most ramifying cobweb I ever got into in my life. If you ask there for new things, the man in charge will tell you there is nothing new in the office; that the principles on exhibit are as old as the hills.

"Dr. A. E. Matteson, of Chicago, who has had a wide and varied experience as an inventor, said this in his discussion of my paper: 'When any member of the profession has anything in the line of improvement which he wishes to bring forward and obtain credit therefor, he should present it before an association that publishes its proceedings, and he should *insist* that it be fully set forth. A society which will not do this much to promote ingenuity, and to thus give honor to whom the honor is due, is unworthy of a progressive membership. There is one thing, however, to which I wish to earnestly protest, and that is in the remark made by one of the gentlemen who have

preceded me in the discussion of this paper, and that was, if I understood him right: That it is unimportant *who* produced such and such improvements or results.—Gentlemen, it *does* make a difference, and it is the difference between justice and injustice.

“‘This is a very poor return for any one to receive who has increased the revenues of the dental profession to the extent that the inventor of the gold crown has done. I care not who it is, if he has made any improvement, in method or appliance, from which we have derived a benefit, he should receive full credit and benefits.’

“‘The tendency of the practitioner to go back and resort to practice once discarded does not in the least indicate retrogression, but more often is indicative of progress. It applies to many of this world’s most important advances, that the at one time cast away, comes to the rescue of new thought, and by mere trifling modification or alteration a process, appliance or apparatus becomes of most emphatic use.

“‘The topic which of late has prompted considerable discussion is the question of ‘when and by whom was the first metallic inlay made? And what of the cast inlay?’ The latter theme was brought into prominence by Dr. W. H. Taggart. To him the credit of the cast inlay is attributed, and his inventive skill is exemplified in his unique appliance for creating a metallic inlay.

“‘The question of priority of casting an inlay is of interest in view of the articles which are of late finding their way into the journals, among which the following extract is of interest, coming from the pen of D. L. E. Custer: ‘Although Dr. W. H. Taggart brought out the use of wax and parafine as a model for an object to be cast at a later date than that proposed by Dr. Ollendorf, of Breslau, yet as is so often the case, we find that these two men were working independently of one another. Dr. Ollendorf’s process applied to prosthetic dentistry, while Dr. Taggart’s applied to operative dentistry. They also differed in the manner of casting, and herein lies the secret when applied to small pieces. While both use a material for a model which



can be completely vaporized by heat, yet the principle involved at the moment of casting is quit different. Dr. Ollendorf employed the specific gravity of about a three-inch head of metal to force the metal into all the recesses of the mould, but Dr. Taggart knew at the outset that such a principle would not be practical when applied to small objects. Therefore having satisfied himself as to the practicability of the disappearing model, as he calls it, he employed compressed air to force the melted metal into the mould, and although even this had been used twenty years ago for the casting of aluminum plates, yet it was new when used in this manner.' (Read before the Ohio State Dental Society, December 1907.)

"While on page 354 of the May, 1908, *Dental Summary*, Dr. Henry Barnes, of Cleveland, says: 'The application of compressed air to the production of a cast inlay was first suggested by Dr. Taggart, and he should have the credit of this application. The disappearing model is not a new principle, but simply the application of an old principle to a new use under a new name.'

[To be continued.]

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## COMMENT

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### THE LOSS OF A REAL FRIEND

On November the 21st, 1914, a memorial meeting in honor of the late Dr. George E. Hunt, of Indianapolis, was held at the Masonic Temple, of that city, and the State Dental Society, the National Dental Association, took active part in rendering to this splendid man a tribute of credit. Addresses were made by Dr. J. N. Hurty, Dr. Frank B. Wynn, Dr. John P. Buckley of Chicago, and Dr. Otto U. King of Huntington, secretary of the National Dental Association. The invocation was pronounced by the Rev. F. S. C. Wicks of All Souls Unitarian Church. Two bronze tablets, one in memory of Dr. Hunt and the other in honor of the late Dr. John Quincy Byran, who was a teacher in the Indiana Dental College, were presented to the school by the alumni.

It was with considerable regret that your editor was oblig-

ed to be absent from this memorial gathering, though in response to an invitation, I sent the following letter:

DR. CARL D. LUCAS, *Chairman Memorial Committee*,  
Indianapolis, Indiana.

*My Dear Doctor:*—It is with the deepest regret, that I find it impossible to be present at the memorial, in honor of my per-



DR. GEORGE E. HUNT

sonal friend Dr. George E. Hunt. Both of us having been engaged in editorial work for the past eighteen years and associated in Dental Faculty labors as well as co-members of other national organizations, I came to know him intimately, as a man of sterling worth and of high progressive ideals. I have

lost a dear friend; the dental colleges have sustained a great loss, and the entire dental profession will miss his genial smile and humanitarian attributes. His innumerable services are a lasting inspiration to the people in general and his civic career merits our highest praises. Sincerely,

DR. B. J. CIGRAND,

Editor of THE AMERICAN DENTAL JOURNAL.

THE AMERICAN DENTAL JOURNAL did not wait until Dr. Hunt died to sing his praise, for in the January number of 1913 I selected him as the character for the department of "Who's Who and Why?" and personally wrote his splendid and useful career. The engraving here used is from a photograph sent me with his compliments.

Dr. Hunt was a warm friend of this journal, and a number of times took occasion to write editorials in *The Oral Hygiene*, commenting on the progressive policy of this magazine and the following editorial clearly and fearlessly indicates his support:

"Dr. Bernard J. Cigrand, the able editor of THE AMERICAN DENTAL JOURNAL, is making a vigorous campaign for reciprocity between state boards. It is a worthy object to fight for. In Indiana, and in many other states, there is a small city directly on the state line. On one side of the street you are in Indiana and on the other side you are in Ohio. If you have a license to practice in Indiana, you may do so legally on the Indiana side of the street, but if you should take a water syringe, a pair of dressing forceps, some cotton and a bottle of clove oil across the street and relieve the toothache of your neighbor over there, you would be a criminal, if the prosecuting attorney could prove it on you, inasmuch as you had violated the laws of the commonwealth of Ohio. Isn't it absurd?

"Dr. Cigrand calls attention to the fact that every clinician before our societies, who gives a chair clinic in a state in which he has no license, is a willful violator of the law. That is true. At practically every annual meeting of every state society, and at every annual meeting of the National Dental Association, bright and shining lights in the dental profession, many of them members of dental examining boards and sworn

to uphold the law in their own state, as deliberately and willfully violate the dental law as any burglar or sneak-thief ever violated other laws.

"Isn't it silly that a man who has been in the honorable and helpful practice of dentistry for ten, fifteen or, maybe,

No. 1

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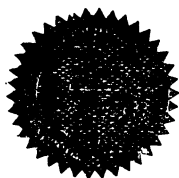
*This is to Certify*

That Bernard J. Eigrand M.D. a licensed dentist  
of the State of Illinois is hereby

*Licensed to Practice Dentistry*

at La Crosse Wisconsin, on the days  
of February 7<sup>th</sup> & 8<sup>th</sup> 1911.

In Testimony Whereof are hereunto affixed the seal and  
the names of members of the State Board of Dental  
Examiners this 24<sup>th</sup> day of February  
A.D. 1911.



F. N. Felt, D.D.S. President.

J. B. Marshall, D.D.S. Secretary

FIRST STATE BOARD LICENSE FOR CLINICIAN

thirty years in a certain state, should not be permitted to practice in another state without taking an examination! It certainly is—silly.

"THE AMERICAN DENTAL JOURNAL, after some years of vicissitudes, makes its appearance in a brand new dress and under new ownership, editorship and publishership. Dr. Bernard J. Cigrand has bought it, and announces himself as editor, publisher and proprietor. The first issue under the new regime is interesting, bright and somehow different. Dr. Cigrand brings intelligence, learning and experience to his work, and should succeed. Here's hoping he will. The subscription price is \$1.00 a year, domestic, and \$1.75, foreign. The home of the JOURNAL is at Batavia, Illinois, where all communications should be addressed."

This kind of editorial shows that in this problem, like other issues, Dr. Hunt was never a "fence straddler;" he was on one or the other side. We have lost a dear friend, and may his memory be kept alive.

---

The most troublesome and commonest affection of the gums is undoubtedly that caused by tartar. The preparation recently introduced to the profession claims to be of great assistance to both patient and operator in removing the source of trouble. The method of treatment is simple, and can be effected without pain. A small quantity of the paste is applied to the gum on both labial and lingual surfaces, and allowed to penetrate into the gum pockets by massaging the gum—not horizontally, but in a vertical direction. The paste should be left for two or three minutes, and then the mouth washed out with warm water containing a tablespoonful of hydrogen peroxide in half a pint of water. This should be continued for some days, and success is assured. The use of astringents is not required, and three sittings are generally sufficient for ordinary cases. The use of gingifix can be thoroughly recommended, especially in the case of sensitive patients. Also in cases of painful pulps, or for bleeding and spongy gums. It will tighten loose teeth, and remove soreness caused by wearing metal or vulcanite dentures. As a tooth paste it may be used daily with benefit.

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THE AMERICAN DENTAL JOURNAL. One year for one dollar.

# ORIGINAL CONTRIBUTIONS

## "THE DENTISTS MUTUAL PROTECTIVE ALLIANCE"

BY DR. B. J. CIGRAND

An organization formed with the above title has attracted sufficient attention to merit professional consideration, and the origin and growth of any dental organization of dentists forms a part of the history of that profession. The claimed purpose of this latest protective society is to militate against illegal and oppressive patents, and to manage suits which may be the outgrowth of any attempt at compelling any of its members to pay fees for office rights. It appears of court records that this Dentists Mutual Protective Alliance has assumed that the patents of Dr. W. H. Taggart are illegal or oppressive and hence are engaged to test the validity of these patents. While it may appear that the purpose of the association or alliance was primarily aimed at the Dr. Taggart process patents, the by-laws of the alliance seem to indicate that the inception or founding rested on protecting its members against any and all patents which seemed invalid, and the alliance so states it in the basic organization laws as follows:

"The purpose of this Association is the protection of the Dental profession against illegal and oppressive patents and to this end to accept the control and conduct and to pay the expense of the defense of any suit brought against any of its members which in the judgment of the Board of Trustees involves a test of the validity of any process patent of value in the practice of Dentistry. No process patent process shall be compromised."

It also appears that all practicing dentists, whether so-called ethical or otherwise are entitled to apply for membership, the election depending on a majority of the directors voting in favor of the applicant. The by-laws specifying:

"Only practicing dentists shall be eligible to membership, subject however, to the approval of the of the board of trustees. Applications for membership must be addressed to the Secretary accompanied by the fee of ten dollars, (\$10.00) and must be acted upon by the Board within twenty days after the receipt of the application. No member shall be admitted without a majority vote of the Directors present."

The regular meetings of the alliance are held on the fourth Tuesday of June, though the President is obliged to call a special meeting, provided at least ten per cent of the membership makes the request in writing, or if eight of the eleven trustees make written request for special meeting.

Notice of all meetings shall be given to all members in writing, at least fifteen days before the meeting is to take place. The President, Vice-President and Secretary are assigned their duties in the commonly accepted way, but the Treasurer's duties and obligation is as follows:

"It shall be the duty of the Treasurer to receive and faithfully account for all funds of the Association. No disbursements shall be made by the Treasurer unless the voucher covering such disbursement is approved by the President or the Board of Trustees. All checks paid out must be countersigned by the President. The Treasurer to be bonded for for \$5,000 or increased at the discretion of the Board."

A rather unique yet admissible manner of obtaining the voice or will or opinion of its members is secured in the following way:

"All questions of policy assessments or amendments to the by-laws which are to come before the Association at a meeting, shall be mailed in ballot form to every member together with the notice for the meeting, and those who cannot attend in person, shall have the privilege to mail their vote to the Secretary by registered letter. These votes to be cast by the Secretary at the meeting."

Other features of the by-laws are in the generally accepted form and the present officers of The Dentists Mutual Protective Alliance are as follows:

*President*—Dr. M. D. K. Bremner; *Vice-President*—Dr. T. B. S. Wallace; *Treasurer*—Dr. J. V. Brown; *Recording Secretary*—Dr. O. F. Ingalls; *Corresponding Secretary*—Dr. J. Clinton Grant; *Financial Secretary*—Dr. V. P. Cooley, 2052 Lane Court, Chicago; *Trustees*—Dr. J. T. McCallum, Dr. J. J. Onthank, Dr. C. A. Hendrickson, Dr. L. F. Weinshenker, Dr. F. J. Bernard, Dr. W. C. Eustice; *Advisory Board*—Dr. F. A. H. Olson, Dr. A. Lind, Dr. Richard Summa, St. Louis, Mo.

From the data sent to me by the President of the Alliance, these statements of his become historical:

“Up to June the 8th, 1914, about twenty men have either paid or made arrangements to pay Taggart \$150.00 each. In the evening of that day twenty-six men met at the offices of Lynn A. Williams, 720 Monadnock Building, Chicago, to discuss the ways and means of forming an organization to resist the Taggart attack. The writer was at that time appointed temporary chairman, and each man present subscribed \$10.00, making \$260.00 in all.

“This money was placed in the hands of the chairman and a committee was formed to issue a letter to the profession in Chicago for a meeting at the Grand Pacific Hotel on June 23rd. About one hundred were present at that meeting and a temporary election was held, the result of which was that Drs. Bremner, Wallace, Brown and Cooley were elected to the offices which they now occupy. About \$500.00 in cash was collected that evening and a committee was then appointed, consisting of twelve men; three from the north, three from the south, three from the west and three from the loop to frame by-laws and to issue a general letter to the profession in Illinois. At the following meeting the by-laws were accepted, the temporary organization was made permanent and eight more offices, the Executive Board were elected; the total number of members at the close of that meeting was nearly two hundred.

“Shortly after that a committee was appointed to visit Milwaukee and interview the officers of the Wisconsin Dental Protective Association. The results were very satisfactory.

“Messrs. Williams and C. C. Linthicum, attorneys, the



latter one eminent in his profession and attorney for the U. S. Steel Corporation, are representing the Alliance.

"The Chicago, Northern Illinois and Peoria County Dental Societies have endorsed the Alliance. The Northern Indiana Dental Society has made arrangements to have its members join the Alliance. The plans have not fully materialized as yet, but it will not be long before Indiana, Wisconsin and Illinois will stand shoulder to shoulder in this campaign. Our membership today is 525 in this State alone.

"At the beginning of July shortly after the Alliance was formed Taggart's attorneys applied for an injunction against every member, present or prospective. This Judge Landis denied to them; he has also put in a stay of proceedings in all suits but the collective suit against the Alliance, which means that any man who joins becomes a party to that collective suit, and therefore becomes immune from individual attack."

M. D. K. BREMNER, *President*.

In an article which summarizes still further the history and activities of the Alliance as voiced by its President, the following open letter entitled, "Process Patents Again," appeared on page 668, *Dental Summary*, 1914:

"When the Court of Appeals in the District of Columbia on February 23, 1913, decided unanimously that Taggart's patents were invalid we congratulated ourselves. Most of us then believed that this case would never be heard of again. We thought Taggart had received his lesson and that he would realize the futility of forcing a process patent upon the dental profession.

"It seems, however, that our felicitations were rather premature and the assumption as to what Taggart would do, were entirely wrong. We were taking things for granted, but we really had no reason for it. Taggart never said so, and I doubt if it ever even entered his mind to quit, for, as a matter of fact, just about three months after, on June 2d, the case of Taggart vs. Moll came to trial in the district court of northern Illinois, before Judge Landis.

"Here fortune favored Taggart. The profession was still drunk with its last success and thought the whole thing a big

joke. Patent litigation is expensive and Moll, being poor and unknown, neither had money of his own nor was he able to rally the support of others to his defense. Owing, therefore, to the lack of funds, the case was poorly defended; this his attorney afterwards admitted. The result, of course, then, was a decision against Moll, which meant that all of Taggart's patents are valid and everyone who made an inlay was infringing. Therefore, according to law, Taggart had a right not only to prohibit the profession of this district to use his method, excepting on such terms as he may choose to offer, but also to recover all profits made by any dentists through the use of inlays from the date of his patents, December 3, 1907, and in the accounting before the master of chancery, Taggart was given a judgment against Moll for about seven years' profit on infringement, amounting to \$1,857.50. Not very long after this judgment was placed on record, the dentists of Chicago received the appended letter. Just how many were sent out is not known, but I believe over one hundred, and the plan seems to have been to pick a man here and there rather than concentrate them in one locality, presumably with the idea of not raising too much of an uproar, which would be apt to crystallize in united action. Naturally, when a man took the letter up to his attorney the advice he received was to settle, since patent litigation is too expensive for any one man to undertake singlehanded. Several did pay up. Finally, however, the letter reached a few men of broader vision, men who were able to look ahead, who, therefore, realized the danger to the profession if a system of license upon manipulative skill should be allowed to establish itself as the result of a decision in a poorly contested case; moreover, when a higher court in another district had declared unanimously these process patents invalid. They realized the injury such a precedent would work upon the economic and scientific welfare of the dental profession of this country, for already, it is claimed, twenty one process patents affecting dentistry have been filed in the Patent Office of Washington. These men succeeded in working up the local interest and the Dentists' Mutual Protective Alliance was organized with the object of resisting

THE AMERICAN DENTAL JOURNAL

PROGRAM OF FOX RIVER VALLEY DENTAL SOCIETY  
COMPONENT SOCIETY OF THE STATE SOCIETY

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This Society has within its precincts the following cities: Aurora, Batavia, DeKalb, Dundee, Elgin, Geneva, Genoa, Oswego, Plano, Richmond, Sandwich, St. Charles, Somonauk, Woodstock, Wheaton, West Chicago, Yorkville.

Officers—Dr. Bernard J. Cigrand, President, Batavia, Illinois; Dr. O. C. Prideaux, Vice-President, Elgin, Illinois; Dr. G. O. Kerfoot, Secretary and Treasurer, Batavia, Illinois.

Dr. Cigrand appointed the following standing committees in the larger cities:

Aurora—Dr. G. W. Wilson, chairman; Dr. H. G. Logan, Dr. C. C. Thomas, Dr. Thompson.

Elgin—Dr. Roy Wilcox, chairman; Dr. E. C. Moore, Dr. V. H. Rea.

Batavia—Dr. F. E. Downs, chairman; Dr. G. O. Kerfoot.

Wheaton—Dr. S. A. Henry, chairman; Dr. M. Coffey, Dr. W. V. Hopf, Dr. G. C. Grove.

DeKalb—Dr. P. S. Smith, chairman; Dr. R. P. Culver, Dr. A. C. Spickerman.

Oswego—Dr. Louis P. Voss.

Sandwich—Dr. N. M. Ogilve, Dr. R. C. Miller.

Yorkville—Dr. P. L. Hoadley.

Somonauk—Dr. F. W. Chamberlain.

Geneva—Dr. E. D. George.

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Annual Meeting, Geneva, Illinois, December 21, 1914

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AFTERNOON SESSION, COUNTY BUILDING, ASSEMBLY HALL  
Address of Welcome—County Superintendent of Public Schools,  
Professor Ellis

- 1 Annual Address—"Are We Performing Fully Our Duty,"  
President Bernard J. Cigrand, Batavia
- 2 Essay—"Improved Method for Taking Impressions," Dr.  
H. G. Logan, Aurora

## AMERICAN DENTAL JOURNAL

- 3 Essay—"Simple Way of Making a Crown," Dr. H. E. Bliler, Chicago
- 4 Table Clinic—"An Inlay Method," Dr. J. C. Y. Moore, Aurora
- 5 Table Clinic—"Something Practical," Dr. P. S. Smith, DeKalb
- 6 Table Clinic—"A Late Idea," Dr. E. C. Moore, Elgin
- 7 Table Clinic—"The Half-Nelson in Crowns," Dr. H. E. Bliler, Chicago
- 8 Table Clinic—"New Methods in Crowns and Bridges," Dr. B. J. Cigrand, Batavia

### EVENING SESSION

Banquet at 6:30, Johnson's Dining Hall.

President Cigrand presiding

### MENU

Bouillon Oysters Chicken Celery Olives Potatoes  
Radishes Sweet Crackers Cheese Salad  
Mother's Pie Cake Cigars Coffee

Post Prandial—Knights of Pythias Hall

- 1 Illustrated Lecture—"What the Radium Ray Discloses in the Mouth," By Dr. F. F. Molt, Chicago

Discussion by members

- 2 "Incidents of Office Practice," Dr. G. W. Wilson, Aurora
- 3 "A Strange Case in Practice," Dr. C. C. Thomas, Aurora
- 4 "An Observation Worth Telling," Dr. P. S. Smith, DeKalb
- 5 "Reporting a Good Case," Dr. S. A. Henry, Wheaton
- 6 "The Case Interested Me," Dr. F. E. Downs, Batavia
- 7 "A Case Quite Notable," Dr. V. H. Rea, Elgin

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THIS journal has set a pace in dental journalism by giving its readers each month a splendid reproduction of some famous or historic subject of dental connection. The leading literary journals can afford to give their readers such ocular luxury because of two reasons: First, the enormous paid up subscription list; second, on account of the enormous revenue obtained from their advertising space. The time has come when it is believed that high appreciation from the profession can do the same for dentistry. Subscribe one dollar.

to the utmost all attempts to force process patents of doubtful validity upon the profession.

"The forming of our organization was evidently, not to the liking of either Taggart or his attorneys, for it immediately put a stop to the collecting of money for license and shattered the dream of easy money. Accordingly, they started suit against the officers and members of the organization. Then they applied for a blanket preliminary injunction which would mean that every present or future member of the Dentists' Mutual Protective Alliance should be enjoined from making cast inlays until the case is finally decided by the court and in order to make it effective the officers should file the membership list with the clerk of court. This was denied them through the efforts of our attorneys. But it shows, nevertheless, the temper with which the case is going to be fought. They want a pound of flesh and will give no quarter as Doctor Taggart has expressed himself on the floor of the Chicago Dental Society: 'I am a business man now and I am going to get all there is in it.' I don't blame him, only it is up to us also to be business men. Yes! and more than that, men of honor and backbone, not a bunch of mollycoddles who can be trampled upon by whomsoever pleases.

"The battle will be fought out right here and with the proper support we ought to be able to defeat Taggart so decisively that he will be convinced of the hopelessness of his efforts. Incidentally, it will serve as a warning to others who may have any aspirations to follow in Taggart's footsteps, proving to them that they can make better use of their money than trying to force a process patent upon the Dental Profession.

"Send us your fee or contribution, call it what you please. The amount is \$10.00. Get your friends and neighbors to do the same. Every dentist in this country will be affected by the results.

M. D. K. BREMNER, *President*,  
The Dentists' Mutual Protective Alliance.

"For further information, address U. P. Cooley, D.D.S., 2052 Land Ct., Chicago, Ill.

(COPY OF LETTER)

"Dr. M. D. K. BREMNER,

June 4, 1914.

353 W. Division St., Chicago, Ill.

"Dear Sir:—We are informed by our client, Dr. W. H. Taggart,

## AMERICAN DENTAL JOURNAL

that you have been, and are at the present time, infringing his patents covering the making of patterns and molds for casting dental inlays, the apparatus used in making such molds, also the finished inlays whether made by you or by others for you. We now offer you a license to use Dr. Taggart's patents in your future practice and to release all claims for past infringement, for \$150.00. This offer will be open, for your acceptance of the license, for five (5) days, and unless it has been accepted by the end of this period, suit will be started against you for the full amount of all profits received and an injunction restraining you from further use of the process for casting gold inlays.

"For your information, we beg to say that on April 15, 1914, Judge Landis, in the final decrees in a similar case, allowed client \$1,857.50 as profits, being 80 per cent of the practitioner's gross receipts, as well as a perpetual injunction restraining further use of the process for casting gold inlays. For disobedience of this order by the defendant, Dr. Taggart was awarded an additional sum of \$300.00. Yours truly,

"DYRENFORTH, LEE, CHRITTON & WILES,

*"Attorneys for Dr. W. H. Taggart."*

To further indicate that the Alliance is not only aiming to oppose the Dr. Taggart process patents, but that it anticipates other legal processess, the following from a letter sent out August 22, 1914, by the Alliance, reads:

"You undoubtedly appreciate the importance of this fight to yourself and to every man in the profession, for it is not only the \$150.00 that Taggart demands, but also the twenty-one other process patents now pending at Washington, that we will have to face, if through lack of support, we fail to win this suit."

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## THE BLILER HALF NELSON

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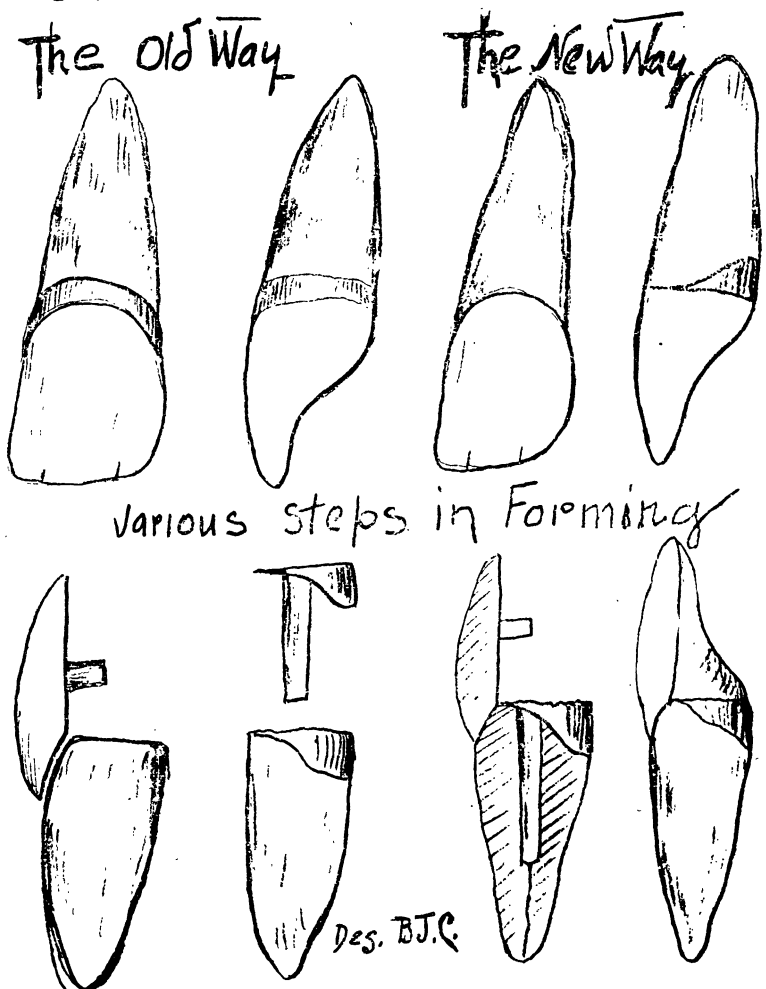
BY H. E. BLILER, D. D. S., CHICAGO, ILLINOIS

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[The readers will enjoy the simple yet practical outline of a new and strong combination crown. Any method which gives us less display of gold should merit our attention.—EDITOR.]

In introducing innovations it is necessary to give them

characterization by a name. People have lost their lives by the strangle hold or full Nelson. Many teeth have been destroyed by the strangle hold—or full band and misfit crowns interfering with the circulation and inter-dental space, causing inflammation, recession and destruction. The half Nelson indicates strength, hence the above name.



The crown is for the anterior teeth. By the half band covering the lingual surface and fitting the porcelain facing against the labial surface of the root, you avoid gingival margin inflammation, secure perfect joints and cleansing surfaces, and obtain all the strength of the root—broken or otherwise. Artistic merit is apparent by absence of gold showing. The quick and

perfect adaption to all positions and conditions make them the most available and desirable crown extant; you duplicate nature so minutely as to make it difficult to detect them even by the trained eye; they are suited to short, close or long bites, as well as bridge attachments. The cost of production, being one dollar per tooth, including the interchangeable facing, is an item in its favor; the poor dentist or patient, at a small cost for dental work receives a useful, serviceable crown.

It is my aim to introduce meritorious innovations, fully proven from clinical experience, so that the dentist of small mechanical skill (of which there many) may benefit, as well as his patients, and commercialism is not the impelling force for this article.

The high cost of platinum and pure gold, as well as the high cost of living, led me to seek a substitute for the precious metals, and not detract from the worth of the work produced. The illustrations which follow will assist materially in grasping the method. The merits of chemically pure silver as a backing, or boxing—for interchangeable, diatoric, or pin teeth, has no equal; it is a close second to gold or platinum. Why? It is impervious to the acids of cements, or even muriatic and sulphuric acids; does not oxidize by soldering; is soft and pliable as pure gold. You can flow 18 or 20 karat solder on it without melting, as the fusing point is higher than the solders intended for 20 karat plate. Buy it of the refiners in one inch strips; thirty-three gauge is the best, as the thinness displays no dark edges; the price per ounce is around sixty-five cents.

*For the posts I use platinoid.* Three or four bars cost quarter of a dollar; each bar will make twelve to fifteen posts for crowns. By using longer posts the tendency or danger arises of cutting through the sides of the root in many cases. I cut crowns of teeth off with sharp burs, and the smallest excising forceps made by the S. S. White Company; face the roots off with the three sizes of regular root facers. You thus save the patient much annoyance by avoiding the use of grinding stones. Cover the platinoid bars with a 20 karat solder by rotating and rubbing two bars together, over a medium flame of the Bunson



burner, and in this manner you obtain practically a gold 20 karat post. Take the bar thus coated and place a small square of the chemically pure silver, the size of the average root, and solder the bar near the center with 18 karat solder; cut the bar off, leaving the post as long as you desire; cut the small half band or shoulder, the size you want them, and bend half round as per illustration. Use scrap, coin or 22 karat gold, using 16 karat solder. Do not use too much heat; it is a delicate job of soldering to avoid having the post drop down. By using care any dentist can make the attachments. I have a large number of attachments, different sizes, on hand, which saves me much time and annoyance.

In placing the attachment on the root, do not let it bind. If it does not stay in position till you get the impression, put a small piece of hot bees-wax on the post and force it up into position. To avoid breaking teeth off the model, stick an ordinary pin down into the impression and run the investment around them.

Modern progress demands the use of interchangeable teeth for the reason no debris or bacteria can collect behind the backing and porcelain, as is the case with pin teeth (prophylaxis). The incisal edge can be protected by beveling, and absolute protection of porcelain without any visible display of gold. The technique is simplified by making or using the ready made adaptable backings. In case of gum recession a longer tooth can readily be slipped into position. If emergency or accident demands, you can quickly replace a broken tooth by cementing a new one in its place on the existing bridge, thus restoring the case to its original condition, and making a perfectly sanitary, sightly and correct mechanical restoration. In the light of progress the old style pin facings are obsolete and impracticable. Some practitioners stick to traditional policies, never discarding the old for the new. The vast majority, however, are alert and not inert, to the interests of their patients, using progressive methods, to their own advantage as well. I obtain gratifying results with the Eveslin; any interchangeable tooth made is much superior to the old pin tooth, as experience will verify.

The porcelain is not subjected to heating. It does not check,

discolor or lose its strength from this cause. The bridge may be heated and cooled as desired. Gives freedom in use of flux and ease in soldering; insures a perfect, unchecked tooth. It is a well established fact that all teeth containing baked-in metal are checked around the pins because of the difference in the co-efficient of expansion and contraction between porcelain and platinum.

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## UNIVERSITY EDUCATION — PROFESSIONAL TRAINING

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BY PRESIDENT EDMUND J. JAMES,  
University of Illinois

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[The following address was delivered at the Studebaker Theater, Chicago, Ill., June 11, 1914, before the alumni and graduating class of the College of Medicine, University of Illinois. President James, who has stood for advanced standing in the professions, has given here a classical definition of university education, and our readers will profit by studying this oration, which emphatically outlines the future for medicine, and dentistry as well.—EDITOR.]

[Continued from page 248 of the September issue.]

I take it, that here there is more agreement in regard to the fundamental problems of medical education, than in the subject which I was discussing a moment ago, and the tendency of modern medical education is to train individual students as far as possible in the actual work which he would have to do as a practitioner when he goes out. This means, of course, an enormous number of patients to be treated. It means great hospitals. It means the absolute control of hospital facilities for instructional and educational work. We are rapidly approaching a period when every great medical school will have facilities for the most efficient instruction in hospitals which will be absolutely under the control of the medical faculty of such school, within the limits, of course, which public sentiment and public prejudice will set. I remember asking an eminent physician on one occasion why he had gone to the University of Vienna to study medicine. He replied that it was only place in the world where a human being could be treated exactly like an animal, and consequently, the only place where you could make the most rapid advance in knowledge of human disease and methods

of treating it. I do not suppose that at Vienna, practice extended to human vivisection; but it came very near to it. There would undoubtedly be an advantage for some members of the human race if other members of the human race could be utilized for purposes of study, pure and simple; and in a society which saw no crime in human slavery, there would, of course, be no objection to such an attitude on the part of the profession, which would involve practicing upon the unfortunate members of the community for the purpose of extending our knowledge and enabling us to treat with greater success the more fortunate members.

Here, of course, our modern society parts company with ancient and medieval. We are coming to recognize more and more that the pain of any one member of society is of exactly the same value as the pain of any other; and the pleasure of one member of society has exactly the same value as the pleasure of any other. Consequently, that society is no more entitled to practice upon the poorest and most insignificant member, who is found in the slums, for the benefit of the richest, most prominent and most influential member of society, than it would be to practice upon the latter for the benefit of the former. These are limits within which, of course, our hospitals will have to work in the future as in the past, and I expect to see some of these limitations drawn more sharply in the future than they have been in the past. On the other hand, I do expect to see an increasing willingness on the part of the sensible, sober portion of the community to let themselves be utilized wherever they can, consistent with their own efficiency as members of human society for the purpose of advancing our knowledge.

I remember on one occasion when lying ill in the hospital for some weeks, a hospital which received a fee for its services to me, and as things go what would be considered an adequate fee, the examining physician asked me if I had any objection to letting a number of medical students visit me when he made his rounds next morning.

I had no objection whatever. In fact, I was very glad to be made use of for scientific purposes. It increased the value which I set upon myself and added to my self-respect. I believe

that in course of time, we shall find on the part of intelligent people a decreasing reluctance to be utilized, as we sometimes say, as a clinical specimen and an increasing willingness to be of such use as we can to the advance of medical science and art for benefit of other people. But at any rate, we must have a set of hospitals in which it will be definitely understood that while the prime purpose is, of course, the healing of the patient, a secondary and very important one is the knowledge which may come to us from a study of these cases in such form, as to render more efficient our treatment of other people; and such use of these cases as will help train physicians to a more efficient practice of their profession.

This whole clinical training is changing its character and will change its character more in the future; and the time will come when no man will go out to practice medicine who has not given far more time and far more attention than at present, to this fundamental, practical preparation for the pursuit of his profession.

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### CHIEF PAUL'S GOLD TOOTH

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BY CLAUDE H. BIRMINGHAM

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[This dental story appeared in *Home Life*, and is interesting.—EDITOR.]

[Continued from page 252 of the September issue.]

"It was up to me to value the skins, since the other two didn't know a thing about them. And like an honest man I said they were worth five hundred dollars. Had I said they weren't worth a whoop we'd have gone on down-river a happy family. But a bunch of easy money like that made the old dentist desperate. He just shoved them under the seat, put a grip in son Jack's hands, and told the buck to lead the way.

"He didn't invite me to accompany him; ah, no, not he. But I went, just the same. And I made it clear to him that I was to be in on the proceeds. I showed him that if there was trouble I wouldn't desert him. 'Why you long lobster, what do you know about dentistry? What do you know about anything?' he demanded loudly. 'This is a business enterprise,

understand. Your wages are five a day to handle the boat, so jump back to it.'

"It made me laugh. It was really funny.

"'Don't you see,' I said, speaking softly, for you boys know that when I lose my temper something happens, 'don't you see that this is a conspiracy, it's a—'

"'Conspiracy!' he screamed instantly. 'Conspiracy!' he yelled. 'You matchstick! You sausage! What do you mean? Tell me that, tell me that, you pinhead, tell me that, you string of beans!'

"Who could help laughing? Even the Siwash smiled. That stoical son of the forest saw the humor of it.

"Then to tease him further, I said:

"'Suppose I tell the chief what the game is, what then?'

"That settled him. Up in the air he sprang to hit me, but the boy caught him.

"'Don't daddy, don't,' he pleaded. 'Don't get angry about nothing. Let Elijah have some of the furs.' And he patted the old man on the back, cunningly working him into good humor again.

"So it was settled that I was to have a share of the skins, and we had peace for a little while.

"The Siwash camp lay a quarter of a mile or so back from the river, in a bunch of dry spruce. We came upon it suddenly, from out of a patch of willows. Our guide then glided out sight among the trees. And the old dentist, whispering: 'Bluff to the finish, boys!' led us on.

"With shoulders squared he marched grandly in among the tents and wicky-up and began to holler: 'Hi, hi, hi! wake up, tumble out, you dogs, show yourselves!'

"And fuzzy black heads popped into sight on all sides of us. Very soon indeed we had the entire community of males, children, and old squaws gathered in a ring about us. The young squaws kept back under cover. They are suspicious of white men.

"Lean, lithe, restless fellows, the bucks were. Men who roam much and eat little. Hunters they, to be sure.

[To be continued]

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Gold Cylinders, ½ oz.....	18.25	Clasp Wire, per dwt.....	1.15
Gold Cylinders, per oz.....	26.50	18K Gold Wire, per dwt.....	.98
14K Solder, per dwt.....	.65	20K Gold Wire, per dwt.....	1.00
16K Solder, per dwt.....	.75	Platinum Sheet.....	Market Price
18K Solder, per dwt.....	.85	Platinum Foll, for Inlay Work.....	Market Price
20K Solder, per dwt.....	.95	Platinum Iridio Wire.....	Market Price
22K Solder, per dwt.....	1.00	Pure Silver.....	Market Price
Coin Solder.....	.95	Pure Zinc, per oz.....	.10
Silver Solder, per oz.....	.90	Pure Tin, per oz.....	.07
8K Gold Plate, per dwt.....	.85	Pure Copper, per oz.....	.05
10K Gold Plate, per dwt.....	.95	White Diamond Alloy, per oz.....	1.50
12K Gold Plate, per dwt.....	1.05		
Coin Gold Plate, per dwt.....	1.02		

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# Combining Infusional With Suctional Forces In Oral Medication and Elimination.\*

BY BERNARD J. CIGRAND, M. S., D. D. S.

Editor of The American Dental Journal. Member of Faculty University of Illinois.

The medical innovation of injecting medicinal agents, directly into the blood streams of the human system, is a credit which belongs to Sir Christopher Wren, who, while he is especially distinguished as the architect of London's Saint Paul's Cathedral, was considerably versed in physiology, and made the famous drawings for the splendid work on "Human Anatomy," written by Thomas Willis. Sir Christopher Wren made the discovery of injecting medicine into the veins, in 1667, but the find never until recently received the approval of medical authorities.

While this infused or enforced medication was intended purely as physiological, this paper hopes to deal with the process as it relates itself to pathological and eliminating phases, and when coupled with that other valuable force known as suction. These two remarkable forces I wish to show can be combined or made to act in harmony with each other, and thus made to serve a most valuable function in dispelling blood congestion, expelling waste tissues, eliminating foreign matter (broken broaches and broken burs), and as being of invaluable service in countless ways.

Oral surgery can receive a great aid by this double power as I can later show, and oral hygiene will receive its greatest handmaiden when this dual element, of transmitting either anodynes or styptics is brought into use. Besides, its power can be employed in checking the leakage of blood.

By uniting these two forces—infusional and suctional, or the "push and the pull" principle—a power is generated which will surprise all who have not seen these tests. The best example I can give is in everyday life, where a man with a wheelbarrow is pushing a heavy load and is unable to push it up a grade; another

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Reprint from the November, 1914, Bur.

man attaches a strap to the anterior supports and he pulls, and the load is transported; they get greater power than if both pushed or if both pulled. There is a remarkable and unexplainable power where these two forces are conjointly employed and in my demonstration they are enclosed and act on the air. Of course you are here dealing slightly with momentum, a term somewhat understood, yet little comprehended. It reminds me of when I recently spoke to a rather deaf patient. I asked him if he knew what I said and he answered, "Yes, I heard you, but I did not understand." So, too, with momentum: we think we know, but we do not fundamentally understand. It is the force possessed by matter when in motion, and the product of the mass as increased by weight and velocity. The penetrating force is retarded in proportion as it meets resistance, and the latter is strong, according to its property of retaining continuity.

This is all very true in ordinary momentum, but this rule does not apply where you have infusion and suction, as in the passing through tissues, since the suction acts like a breaker of resistance, and is really like a snowplow, putting edge on the engine and cutting its way; the suction seems to open up and make the power of infusion all the greater. And since the transmission of medicines through the fibers of the vascular tissues is all the more facilitated, because of the capillary blood streams, resistance is all the less, and hence penetration, while with little momentum, yet rapidity, is established without that essential—weight of mass. In other words, you establish an impulse in matter to take a certain direction, and this little understood impulse assists in creating speed. Some say it requires weight and substance to engender speed, but in infusion and suction, such as you have in whirlwinds and cyclones, you have great speed—even velocity—and weight and substance are certainly not the all-important elements in the power and the force demonstrated by the passing storm.

I have been unable to get satisfactory replies even from professors of physics and teachers of mechanical philosophies, relative to the power generated when infusion and suction are so harnessed up as to work in unison. In fact, it would make a most interesting chapter to read the replies I received; to observe the diverse ideas they entertain and to note the variety of opinions they hold on what

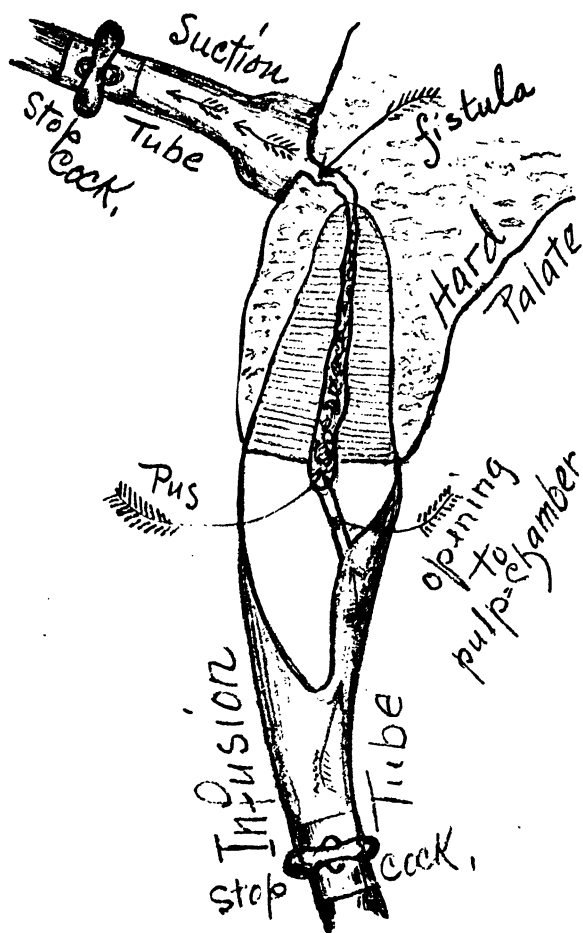


all have stated to be a rather new method of bringing about enhanced power. It would be difficult to say which force is the one which especially enhances, for each has its own peculiar property and reminds me under experimentation of the sharp wedge (suction) and the wooden mallet (infusion). Which is most important? I don't know. The former seems to open up the way, while the latter evidently drives the matter or material before it.

For many years I have been having these two equations before me, and have asked hundreds of my patrons and friends regarding the proposition, and not one have I ever found who was able definitely and without equivocations to tell the how and the why of the circumstance, or what power was generated. Even in that now quite common mechanical device, the carpet or rug cleaner, where suction is used to eliminate the dust and dirt, you observe the strength of this power of suction, but I have suggested that if the power of infusion or blowing of air currents could be so connected and the two forces permitted to act simultaneously and interchangeably, what a terrific power there would be generated and how incalculably more efficient would be the cleaning power! Now if this would increase the property of transmitting dust and dirt, why could not that same double force carry fumes, transport powders, and bring vapors and fluids along in these straight currents of air? The air shifts in direct sheets or layers, and their property for carrying any body or material or matter which congenially combines with it, such as we require in the medication and the purification of dental tissues and oral surroundings, will slide along on these direct "air drafts" and accomplish remedial results which will certainly improve if tissues are entered by these air currents freighted with anodynes and restoratives.

Even the syphon principle, when attached to the infusion method, the stream of air passes considerably faster and penetrates tissues with a readiness which otherwise would be difficult. Besides, when liquids are being passed through tissues, the suctional process aids capillary attraction, since contact of capillaries and contact of atoms and relationship of ions is accomplished, and if the pressure is kept up and the suction continued, the liquids will finally pass through and ooze out at the suctional receptacle. The process may at times act slowly, depending on the amount of draft and char-

acter of the liquid or the fumes; but if the liquids are heated to a temperature approaching hot (not boiling) water, the penetration is all the quicker, as heat causes the liquids to become more ef-



**Draining Pus**

fervescent, and the nearer you get the liquids to vapor the more readily will they pass through the tissue.

This forms a great field for experimentation. The syphon, the vacuum and the suction principles can be made to play in the oper-

ation, and if there are readers who think these three pulling forces are exactly alike, they have a new lesson to learn in physics. The suctional force can be considerably increased over either the syphonic or vacuum, and if sufficient power is attached to the piston or pump, creating the suction, a remarkable power can be generated. When the process of infusion is employed alone, the air in the tissues, and the experiments show, there is considerable of this in the blood and in the tissues, both osseous and vascular. This air which is residual there, tends to block or obstruct the power of forcing the fumes or liquids forward, but when in the direct path of the infusion, you create a suctional force, then the residual air, quickly follows towards the pulling force, and the pushing force is thus aided. This problem of the presence of air in the tissues, as well as the watery consistency of human blood, can be easiest overcome by lending the suctional force as a helper to the infusional force, and these two give you a power which stimulates the chemical force known as capillary attraction. It is true that the action is slow; so is the leaking of sap from the maple a slow process, yet it eventually fills pans, then pails, and finally fills barrels. And so with this. It may act slowly but it acts, and does this even more rapidly than most practitioners anticipate. In fact it may be the underlying principle in the circulation of blood.

With the use of a compressed air outfit and a reverse valved apparatus, giving suctional force, you have all the active elements necessary; the remainder of the process is simply a matter of attachments.

These two forces, the blowing and the sucking or the infusional and the suctional, were long recognized in the musical world, since in all mouth instruments, especially the reed kind, the principle of blowing as well as sucking is employed to make the tones, but these principles were not used together or simultaneously, but separately, and this alternation in the use of the blow and the suck is well commented upon in "Bacon's Natural History," where it states: "Sounds, both exterior and interior, may be made as well by suction as by emission of the breath, as in whistling." But in my suggestions for dental purposes these two forces do not act separately or alternately, but simultaneously and together, causing a "draft of air," as is in a minute scale of a

summer storm of wind, where the "pull" is an element as important as the "push," and both creating a terrific rapidity of air currents; these same currents give an action to all things within their reach, and this molecular impetus, which sways all ions, atoms, molecules and objects in the direction of the shift of air and penetrates semi-solids, and all things have been proven semi-solid, especially so since we have been unable to create or establish a so-called perfect vacuum. So we have also been unable to prove a complete solid or a body without air space, and if such be the fact, why, then, by this double force—"infusion and suction," we can drive air in and out of practically all supposed solids, and certainly may accomplish this feat in human tissue, which is so abundantly supplied with air.

The process of treatment which I here suggest, while I have not perfected its *modus operandi*, and while it is still in a crude form, yet I have incidentally experimented upon it since 1892 and improved upon it superficially; and now, at the urgent request of Editors Brophy and Tuller, I present my findings to the readers of *THE BUR*, and it is my wish that practitioners may assist in evolving a simple and practical apparatus with which these experiments may ripen and beget a harvest of utility.

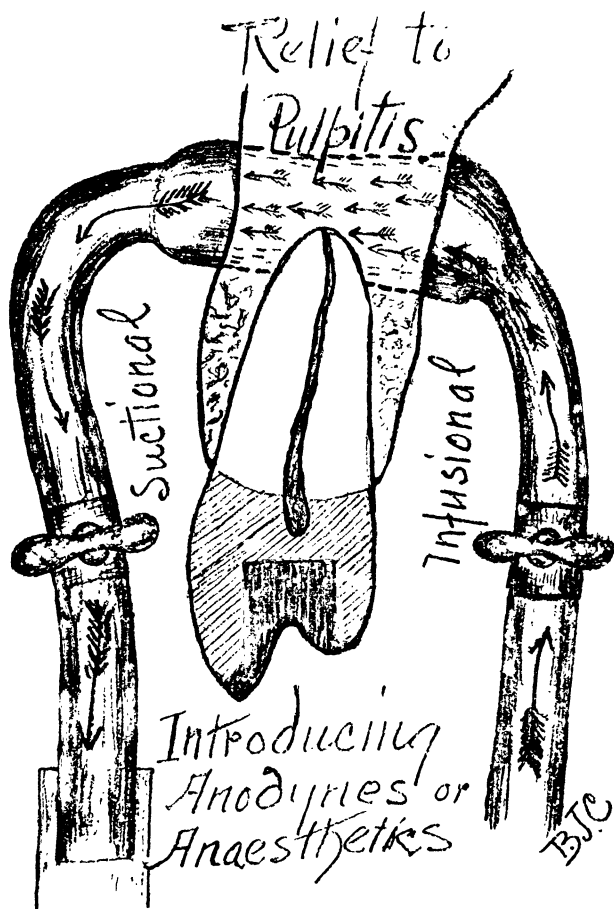
For many years I have used the idea, and with varying degrees of success, but always with a satisfying element coming to the surface, that there was fundamentally good practice likely to be born of the effort. As early as 1882, when a lad of sixteen, I constructed an engine, which utilized the idea that if the cylinders of the locomotive had, at each end, a valve and tube, which permitted of suction assisting in displacing the steam and thereby aiding the piston in its return trip, the steam would not be compelled to buck against itself, and there would be actually in the cylinder that double action of "pull and buck," at every stroke of the piston. But where would I get the suction action without drawing on the actual steam energy of the engine? Well, I would gather the suction force from the power it requires to stop the passenger or freight train, which, by the way, is an enormous and terrific power. The same power which would be required to stop the train, that grinding, that breaking and that friction, would be converted into an energy, either by electric or direct pumping,

which would operate valves and produce approximate vacuum in cylinders, or tanks under the cars, and when the locomotive began to start up, these suction chambers would make the burden less, as they would have stored away in batteries or chambers the wasted friction in the form of a "pulling force" in the element of "suction." While this is all in the form of a parenthetical sentence, yet it illustrates that the power can be utilized in other departments of science besides dentistry, and correspondence in my possession indicates that the idea is capable of being put into actual operation, and that the same power required in stopping a train can by breaks, be transformed into electric energy and also direct mechanical suction, thus giving a power which will again assist that same engine and train to start itself with less steam burden or loss.

Now the idea of applying it in dentistry was first given to my senior prosthetic class at the Northwestern University in 1894, when lecturing upon the methods of eliminating pus from a tooth, which had burrowed a canal or opening through the alveolar process, and which also had an opening through it lingually, thus allowing a flushing in either direction. But my appliances were crude, and the blackboard demonstration was not intended as a part of regular or even accepted practice, but merely given as suggestion.

In 1903 I read a paper before the Southwestern Michigan Dental Society, held at Kalamazoo, in which I again took courage and heart and demonstrated the possibility of harnessing up these two forces to acquire a power which would be of service in several directions. Besides calling attention to the fact that root canals could be cleansed by this method, I showed how wonderfully strong the action was, by driving red ink through metal cylinders filled with cement. The ink was "drawn" and "pushed" through with a directness equal to the sun's rays passing through a plate of crystal glass. *The Dental Summary* gave considerable notice to the discussion, and also some of the comments of the speakers. Then at the Wisconsin State Dental Society, in 1909, I gave both a table and blackboard demonstration of its use in prosthetic and operative procedures, and showed how in Highmorian difficulties you could flush the antrum by this double action force and get cleanliness

where other methods only approached that desirable result. In alveolitis, and in various other complications of the soft parts of the mouth, this double power of infusion and suction could be employed with more or less satisfactory results, and render unto the injured tissues, either bone or muscle, a method of kindlier in-



**Relieving Inflammation.**

tentions, and certainly in less time in most cases. For the cold, cruel steel instruments are certainly contra-indicated in scores of treatments, especially where the peridental membrane is in-

volved, for this scraping, scratching and scarring will some day be looked upon as one of the brutal and illogical treatments which false teaching gave to a profession when it was deep in the woods and was eagerly groping to find light and a clearing or meadow lands. The future will evidently evolve a method, be it "infusional or suctional," or both, but its basic principles will be to remove the foreign matter by a system of flushings, in which the water or liquid currents will rush to and fro like the shuttle in a sewing machine, and by this rapid cleansing and this congenial and natural friction the sediments and the deposit and the waste tissue will come away from the sides of the roots, and these pockets of pus and these caverns filled with debris will have been flushed, without injury to the living healthy organism and contribute relief and regeneration to the disturbed and abnormal surroundings.

If the attachments of these deposits or barnacles on the sides of the roots should demand more energy to effect their removal, we will be obliged to resort to some kind, congenial or chemical agent which will dissolve without destroying the peridental membrane, and then apply our flushing process with its counter courses, and thus dislodge the foreign matter. But believe me, the future will bring for the treatment of alveolitis drastic changes if we are to practice dentistry along logical and physiological lines; this wholesale destruction of membranes, this cutting away of osseous tissue, and this so called "heroic dentistry" will, I am satisfied, soon pass away. What method will be established in its stead, I do not know; possibly the idea I have here given, but as to that, I do not care a snap of my finger, only this is my hope, that something better, something kinder, something more reasonable will eventually take the lead in the salvation of teeth and alveolar tissues, suffering from this dreadful disturbance we call alveolitis, or kindred denominations.

I am treading on dangerous ground, I well know, especially so since some of our experts swear by all that is holy that the steel hooks, the sharp instruments and the scalers, hatchets, hoes and chisels are in the stirrups and will hold the field. But those of us who have lived to see twenty-five years of practice have witnessed many changes and false leaders and false doctrines, as well as fake practice, fade from the horizon, and regardless of what may be the

eventual practical and logical method, let us remember that human service is our aim, and that he serves his profession best who renders greatest good to humanity.

Realizing that my method here depicted is distant from perfection, and that its application will require considerable further study and experiments, yet I hope all interested will assist in giving the academic practice some reasonable and earnest trial, granting gladly the process I describe to the profession, in the belief and trust that others may assist me in perfecting the apparatus and make simple its application so that some good may accrue to the patients and incidentally to the general practitioner.

Now the "draft" phase, with its infusion and suction, is so controlled by stop cocks, that the former as well as the latter is entirely under the control of the operator, and the currents may be made tame or wild, just as you may require.

The method also admits of using liquids or vapors or fumes, and the attachments can be evidently made so any other medicaments in thin form could be transmitted into the tissues, and thus the disinfecting qualities, as well as the cleansing properties, could be employed with the least possible danger. The infusional opening can be placed opposite the suctional opening, and these two openings or tubes or mouths, can be exchanged so that a current passing from without, in, could quickly be altered so it would pass from within outward, thus affording a to and fro action. The anodynic action of medicine could easily be tried by placing the one opening on the back of the hand and the other on the palm of the hand, allowing the currents to penetrate and pass through the tissues. Of course they will enter more readily if slight punctures are given the cuticle on both sides of the hand. The same will be true on the ear and also on any position of the superior or inferior alveolar process, where the two forces can be positioned opposite each other, with human living tissue between them. Nerves are only sensationless at parts back or separated by the infused anodyne towards the periphery.

Just how strong the current or "draft" must be to resist the flow of blood and not be diverted from its course I have not been able to determine, but it must be sufficiently bold to overcome the current of the blood flow to be active locally. Quite likely some of

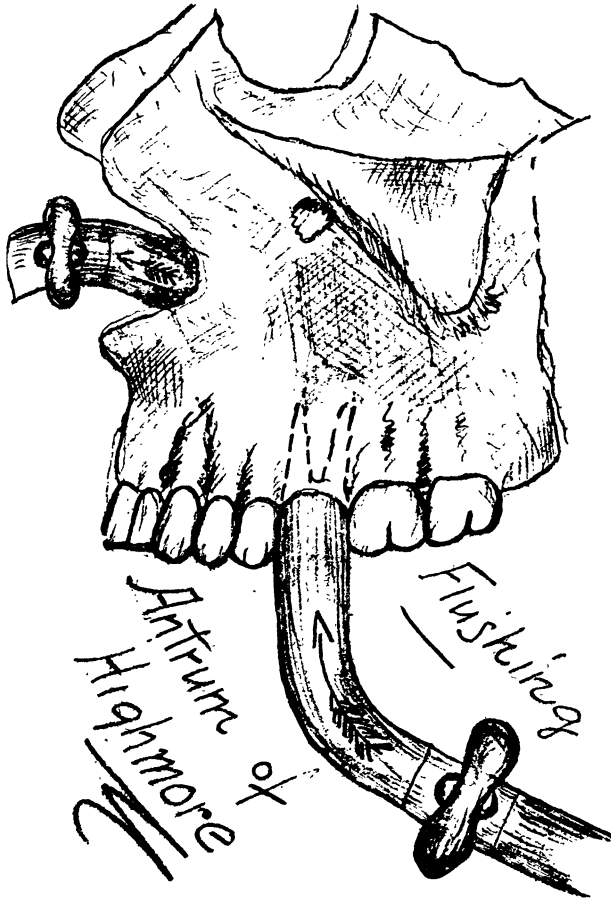


the anodyne and also the agents of medication, would combine with the blood, but even this chemical affinity might be a help rather than a detriment.

The temperature, too, has more to do with the success than would be at first surmised. When liquids are warm, at least those which we ordinarily employ in anodynamic form, they penetrate quicker and become absorbed sooner when of a trifle higher than blood heat, and so this equation of having the medicinal agents of "right temperature" is more of a factor than may be thought.

My earliest experiment in this direction of employing the double force of infusion and suction, dates to 1893, when a Mr. Brand called with a cuspid badly ulcerated, but the pus had not yet devoured an opening through the tissues. The cuspid stood alone; the neighboring teeth had been extracted years before. A near-by dentist had opened into the palatal surface while the pulp was still alive, but death came to the pulp and the hole was clogged with debris, and so the inner turmoil began, with the sequence that relief must be obtained and in the shortest space of time. I applied a local anæsthetic and lanced the gum. The pus, mixed with blood, oozed forth, but the pain was intense, and Mr. Brand insisted I extract that tooth without delay, but I reasoned with him that it would soon subside and that he might require the root or the tooth to assure him with a partial plate or bridge. The pain kept up; he became distressed, and I drilled the hole in the tooth larger, flushed the cavity, but no relief. Then I placed a small rubber tube over the crown portion of the cuspid, took the other end of the tube of rubber and attached it to a Hayes bellows, and also took an old suction syringe, cut off two-thirds of its nozzle and slipped a rubber tube over it, and plunged the piston into the cylinder, placed the rubbers, one over the crown and the other immediately over the crucial-formed lance-mark, and with his aid, I compressed the bellows and at the same time pulled the piston of the syringe, and gradually conjoined the force of infusion and suction; he winced, and I removed the tubes of both rubbers, and observed that the blood was still streaming from the wound. When I replunged the piston into the cylinder of the syringe, and held it over an empty medicine cup, I was astonished to see the profuse amount of pus and blood which I had driven from his gums and

face; and while the pain was still there, he said it was considerably better and he could endure it if there was no return to the excruciations. I then proposed we flush the tooth with warm water and



Flushing Antrum

apply the same forces, but by the time I was arranging for the new tactics, he exclaimed: "Say, doctor, the pain has subsided, let good enough alone," and I sure was willing, though I urged that he call the next day and receive further dental care; and it was then that I received the additional lesson in employing this double

force, for I placed a pledget of cotton, saturated with carbolic acid and alcohol, and reënacted the treatment, using the same force and the same crude apparatus; the carbolic acid and alcohol shot through the canal out through the fistula into the suction chamber. I released the rubbers and the medicine was still belching from the wound and leaving a blanched trail on his maroon-colored gums. I quickly treated the injury to the gums and dismissed the patient, and within a month the old, distressing cuspid was lending service in supporting a small bridge.

Where it is not possible to slip a rubber tube over a troubling tooth, invest a silver tube in cement or modelling compound and then attach the rubber tube.

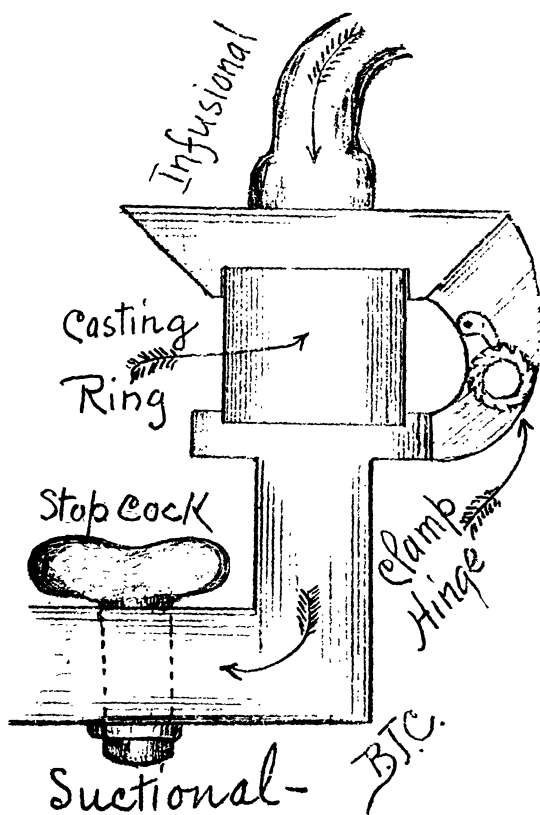
It has been my practice ever since, where I can find place to attach a tube or tubes in this manner, to do so, and the results have invariably been satisfying, though I have met with complications which experience has taught me to avoid.

When Dr. R. C. Brophy gave to the profession the suction casting machine I frequently used that apparatus for relieving and curing ulcerations, both in cases as cited, and in severe alveolar disturbances. I recall one severe case of ulceration and in a patient of a very sensitive temperament. The gentleman was Mr. Isaac Cohn, a prominent loop business man. The case was similar to the one of Mr. Brand, and in the presence of Dr. Leo Cummings and Dr. A. C. Bauer, at that time practicing at Logan Square, I not only relieved but cured the distressing cuspid.

Innumerable are the cases I could show where this double action of the infusional and suctional forces has aided me in bringing about healthy and normal tissues and saving not only the teeth, but the surrounding osseous supports.

In 1911 I also used this combination in casting a metal post to fit a large though well-reamed pulp chamber, and placed upon the casting a Davis crown, having positioned the artificial crown on the root with the wax filling the crown opening, and the root canal removing entirety, and casting the case by employing the infusional and suctional forces, and received as a result a splendid product. In severe cases of alveolitis, an impression may be made of the ailing teeth, and coating the plaster cast or model with liquid rosin, thus making all the teeth a trifle thicker and a

trifle longer, build a wax form about them and invest and make the wax envelope or continuous capping into vellum rubber, having waxed up the case considerably to overlap the alveolar ridges and running small silver tubes over the occlusal surfaces of the teeth. When the case is vulcanized the silver tube is easily drilled into, and small holes are made to correspond to the occlusal surfaces, and the entire attachment in this soft, yielding, pliable vellum rubber,



Casting by Infusion and Suction.

is slipped over the sore or distressed teeth, and by attaching the infusorial and suctional forces to these silver tubes you get a strong current of air racing about these teeth and sucking up and

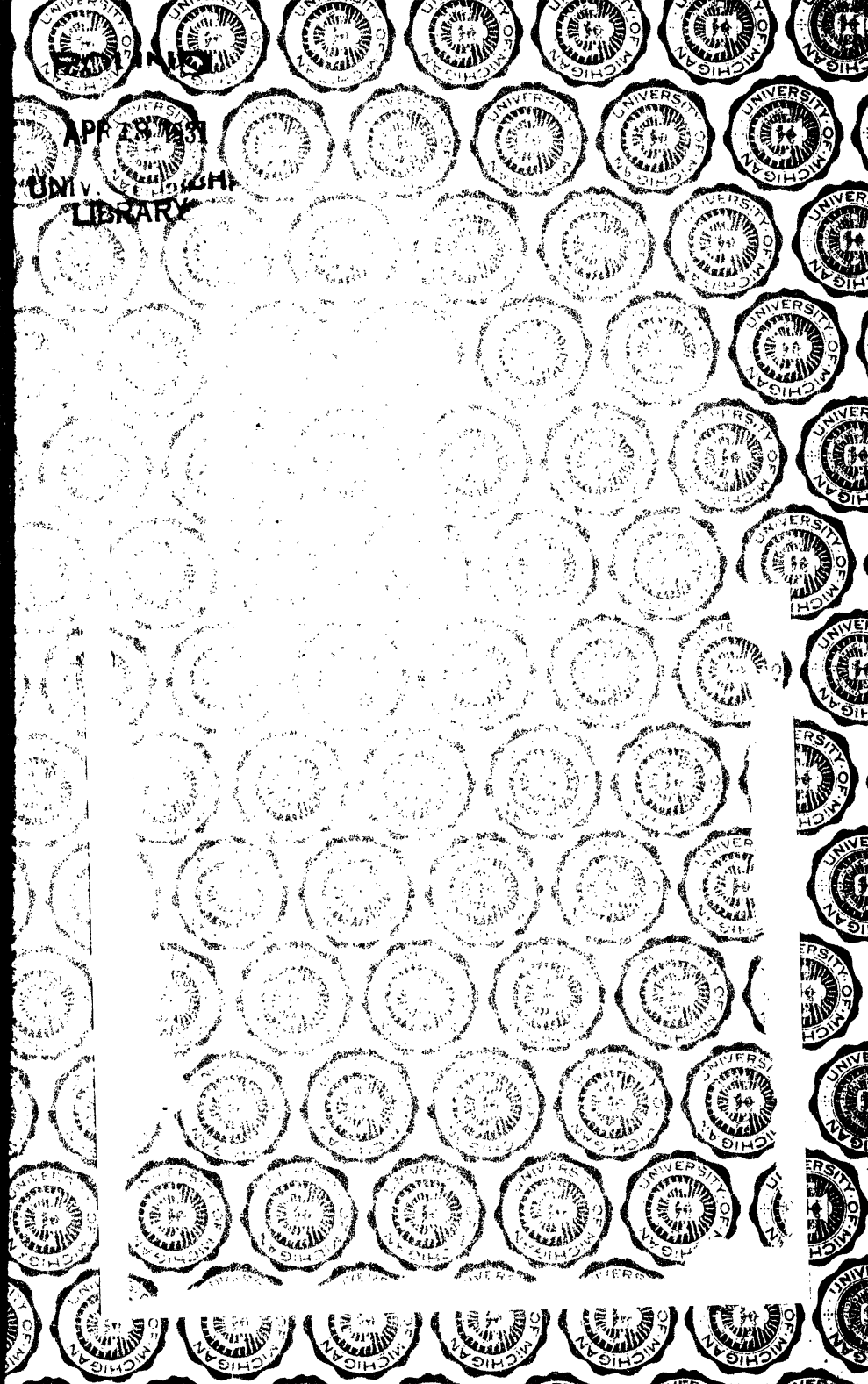
out the debris and pus; and if the silver tubes are placed so one rides the occlusal surface while the other is slightly above the alveolar ridge, a still greater action of the air is created about the roots. But this treatment must naturally follow after the foreign matter has been dissolved and there is super-alveolar cleanliness, and tartar has been carefully removed.

In 1904 I made a vellum cap, bringing it well down on the alveolar process and arranged silver tubes and directed, at the suggestion of my personal friend and physician, Dr. George Leininger, now superintendent at the State Hospital, a current of formaldehyde around the root of a central, and repeated the treatment, forcing the fumes of this disinfecting material into the peridental surroundings by means of an Evans blowpipe, attaching that tube of rubber, which usually connects with the city gas, to the bag of formaldehyde and drawing it into the diseased tissues by the infusional and suctional forces. The patient was not anxious to save the tooth, and I did not repeat the experiment and can give no record, though the fumes penetrated the tissues.

While some of this experience has been smattering, yet it has incidentally afforded me some pleasure, as all other experimentations along prosthetic lines have always interested me, and my only wish is that others may correct me where I am wrong and follow me where I may be right.



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